
Embryonic stem cells repair radiation damage in mice

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Radiation can effectively destroy brain tumor cells â but at a cost. While killing the tumor cells the treatment also damages normal cells in portions of the brain involved in learning and memory, leaving people with varying levels of impairment. New work by researchers at the University of California, Irvine suggests that human embryonic stem cells are able to ameliorate radiation-induced normal tissue damage.

The group, led by CIRM SEED grantee Charles Limoli, irradiated the heads of rats then transplanted human embryonic stem cells into the brain. In a memory test four months after the radiation, transplanted rats performed as well as rats that had never been irradiated. Rats that received radiation but no transplanted stem cells showed a significant decline in learning and memory.

The transplanted cells had migrated through the brain and matured into a variety of brain cells. The cells did not form any tumors (at least by 4 months) â something scientists are careful to watch for in transplanted stem cells.

In a press release by UCI, Limoli said:

“ "With further research, stem cells may one day be used to manage a variety of adverse conditions associated with radiotherapy."

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A.A.

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